with Specifications (incorporated by reference; see § 86.1).

(a)(7)–(a)(9)(i) [Reserved]. For guidance see § 86.094–26.

(a)(9)(ii) The test procedures in §§ 86.106 through 86.149 and § 86.158 will be followed by the Administrator. The Administrator may test the vehicles at each test point. Maintenance may be performed by the manufacturer under such conditions as the Administrator may prescribe.

(a)(9)(iii)–(b)(2) introductory text [Reserved]. For guidance see § 86.094–26.

(b)(2)(i) This paragraph (b)(2)(i) applies to service accumulation conducted under the Standard Self-Approval Durability Program of § 86.094–13(f). The manufacturer determines the form and extent of this service accumulation, consistent with good engineering practice, and describes it in the application for certification. Service accumulation under the Standard Self-Approval Durability Program is conducted on vehicles, engines, subsystems, or components selected by the manufacturer under § 86.000–24(c)(2)(i).

(ii) This paragraph (b)(2)(ii) applies to service accumulation conducted under the Alternative Service Accumulation Durability Program of § 86.094–13(e). The service accumulation method is developed by the manufacturer to be consistent with good engineering practice and to accurately predict the deterioration of the vehicle's emissions in actual use over its full useful life. The method is subject to advance approval by the Administrator and to verification by an in-use verification program conducted by the manufacturer under § 86.094–13(e)(5).

(b)(2)(iii)–(b)(4)(i)(C) [Reserved]. For guidance see § 86.094–26.

(b)(4)(i)(D)–(b)(4)(ii)(D) [Reserved]. For guidance see § 86.095–26.

(b)(4)(iii) [Reserved]

(b)(4)(iv)–(c)(3) [Reserved]. For guidance see § 86.094–26.

(c)(4) [Reserved]. For guidance see § 86.096–26.

(d) introductory text through (d)(2)(i) [Reserved]. For guidance see § 86.094–26.

(d)(2)(ii) The results of all emission tests shall be recorded and reported to the Administrator. These test results shall be rounded, in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), to the number of decimal places contained in the applicable emission standard expressed to one additional significant figure.

(d)(3)–(d)(6) [Reserved]. For guidance see § 86.094–26.

[61 FR 54883, Oct. 22, 1996]

§ 86.000–28 Compliance with emission standards.

(a)(1) This paragraph (a) applies to light duty vehicles.

(2) Each exhaust, evaporative and refueling emission standard (and family particulate emission limits, as appropriate) of § 86.000–8 applies to the emissions of vehicles for the appropriate useful life as defined in §§ 86.000–2 and 86.000–8.

(3) [Reserved]

(a)(4) Introductory text [Reserved]. For guidance see § 86.098–28.

(a)(4)(i)(A)–(a)(4)(i)(B)(*2*)(*i*) [Reserved]

(a)(4)(i)(B)(*2*)(*ii*) These interpolated values shall be carried out to a minimum of four places to the right of the decimal point before dividing one by the other to determine the deterioration factor. The results shall be rounded to three places to the right of the decimal point in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(a)(4)(ii)(A)(*1*) The official exhaust emission test results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be multiplied by the appropriate deterioration factor: *Provided*, that if a deterioration factor as computed in paragraph (a)(4)(i)(B)(*2*)(*ii*) of this section is less than one, that deterioration factor shall be one for the purposes of this paragraph. For the SFTP composite standard of ($NMHC+NO_X$), the measured results of NMHC and NO_X must each be multiplied by their corresponding deterioration factors before the composite ($NMHC+NO_X$) standard is calculated.

(*2*) The calculation specified in paragraph (a)(4)(ii)(A)(*1*) of this section may be modified with advance approval of the Administrator for engine-system combinations which are certified under the Alternative Service Accumulation Durability Program specified in § 86.094–13(e).

(a)(4)(ii)(B) [Reserved]

(a)(4)(iii) The emissions to compare with the standard (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of § 86.098–28 (a)(4)(ii)(B) and (C) and paragraph (a)(4)(ii)(A) of this section 211a for each emission-data vehicle. For the SFTP composite ($NMHC+NO_X$) results, the individual deterioration factors must be applied to the applicable NMHC and NO_X test results prior to calculating the adjusted composite ($NMHC+NO_X$) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in § 86.164–00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard (or the family particulate emission limit, as appropriate), it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1). The rounded emission values may not exceed the standard (or the family particulate emission limit, as appropriate).

(a)(5)–(a)(6) [Reserved]

(a)(7) introductory text [Reserved]. For guidance see § 86.098–28.

(a)(7)(ii)–(b)(4)(i) [Reserved]

(b)(4)(ii) Separate exhaust emission deterioration factors for each regulated exhaust constituent, determined from tests of vehicles, engines, subsystems, or components conducted by the manufacturer, shall be supplied for each standard and for each engine-system combination. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable deterioration factors determined from FTP exhaust emission results will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels.

(iii) The official exhaust emission results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph (b)(4)(iii).

(iv) The emissions to compare with the standard(s) (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of paragraph (b)(4)(iii) of this section for each emission-data vehicle. For the SFTP composite ($NMHC+NO_X$) results, the individual deterioration factors must be applied to the applicable NMHC and NO_X test results prior to calculating the adjusted composite ($NMHC+NO_X$) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in § 86.164–00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard, it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(5)(i) Paragraphs (b)(5)(i) (A) and (B) of this section apply only to manufacturers electing to participate in the particulate averaging program.

(A) If a manufacturer chooses to change the level of any family particulate emission limit(s), compliance with the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family particulate emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the particulate standards in § 86.099–9 (a)(1)(iv) or (d)(1)(iv), or the composite particulate

standard as defined in § 86.094–2, as appropriate, at the end of the product year.

(ii) Paragraphs (b)(5)(ii) (A) and (B) of this section apply only to manufacturers electing to participate in the NO_X averaging program.

(A) If a manufacturer chooses to change the level of any family NO_X emission limit(s), compliance with the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family FTP NO_X emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the NO_X standards of § 86.099–9(a)(1)(iii) (A) or (B), or the composite NO_X standard as defined in § 86.094–2, at the end of the product year.

(b)(6) [Reserved]

[61 FR 54884, Oct. 22, 1996, as amended at 75 FR 22978, Apr. 30, 2010]

§ 86.001–2 Definitions.

The definitions of § 86.000–2 continue to apply to 2000 and later model year vehicles. The definitions listed in this section apply beginning with the 2001 model year.

Useful life means:

(1) For light-duty vehicles, and for light light-duty trucks not subject to the Tier 0 standards of § 86.094–9(a), intermediate useful life and/or full useful life. Intermediate useful life is a period of use of 5 years or 50,000 miles, whichever occurs first. Full useful life is a period of use of 10 years or 100,000 miles, whichever occurs first, except as otherwise noted in § 86.094–9. The useful life of evaporative and/or refueling emission control systems on the portion of these vehicles subject to the evaporative emission test requirements of § 86.130–96, and/or the refueling emission test requirements of § 86.151–2001, is defined as a period of use of 10 years or 100,000 miles, whichever occurs first.

(2) For light light-duty trucks subject to the Tier 0 standards of § 86.094–9(a), and for heavy light-duty truck engine families, intermediate and/or full useful life. Intermediate useful life is a period of use of 5 years or 50,000 miles, whichever occurs first. Full useful life is a period of use of 11 years or 120,000 miles, whichever occurs first. The useful life of evaporative emission and/or refueling control systems on the portion of these vehicles subject to the evaporative emission test requirements of § 86.130–96, and/or the refueling emission test requirements of § 86.151–2001, is also defined as a period of 11 years or 120,000 miles, whichever occurs first.

(3) For an Otto-cycle heavy-duty engine family:

(i) For hydrocarbon and carbon monoxide standards, a period of use of 8 years or 110,000 miles, whichever first occurs.

(ii) For the oxides of nitrogen standard, a period of use of 10 years or 110,000 miles, whichever first occurs.

(iii) For the portion of evaporative emission control systems subject to the evaporative emission test requirements of § 86.1230–96, a period of use of 10 years or 110,000 miles, whichever occurs first.

(4) For a diesel heavy-duty engine family:

(i) For light heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 110,000 miles, whichever first occurs.

(ii) For light heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 110,000 miles, whichever first occurs.

(iii) For medium heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 185,000 miles, whichever first occurs.

(iv) For medium heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 185,000 miles, whichever first occurs.

(v) For heavy heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 290,000 miles, whichever first occurs, except as provided in paragraph (4)(vii) of this definition.

(vi) For heavy heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 290,000 miles, whichever first occurs.